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A Practical Essay on
Hemeralopia, or Night-Blindness
commonly called
NYCTALOPIA.....

By

R.W. Bampffield.
1812

A
PRACTICAL ESSAY
ON
HEMERALOPIA, OR NIGHT-BLINDNESS,
COMMONLY CALLED
NYCTALOPIA;

AS IT AFFECTS SEAMEN AND OTHERS, IN THE EAST AND WEST INDIES,
CHINA, THE MEDITERRANEAN, AND ALL TROPICAL CLIMATES; IN
WHICH A SUCCESSFUL METHOD OF CURING THE DISEASE IS DE-
TAILED.

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COMMUNICATED BY
DR. ROGET.

Read December 7, 1812.

UTILITY is the principal motive that has influenced me in intruding on the notice of the Society the practical essay which I now introduce to it, and which I trust will be found to point out a simple and effectual means of curing a complaint which is so common among seamen in hot climates, and which has generally baffled the endeavours of medical men to remove it.

The history of idiopathic night-blindness has been transmitted to us by very antient writers, and the antient and modern treatment of it has been hitherto left to nature, or principally confided to the employment of different preparations of the livers of animals.

It is presumed that the history and treatment of scorbutic hemeralopia are in a great measure new, or at all events, more copious and satisfactory than has heretofore been the case.—Mr. Telford, in Sir Gilbert Blane's *Treatise on Diseases of Seamen*, notices nyctalopia, "as a symptom of scurvy," and treated it with success in a few instances, by blisters behind the ears and other remedies, but professes that he does not understand the nature of the complaint. As far as the circle of my reading extends, and the necessarily limited library of a navy surgeon has permitted me to investigate, I have not found it described as a distinct species.

The general means of arresting the progress of scurvy, as connected with hemeralopia, will be but briefly noticed, as it is presumed that they are generally known. I would however observe, that although there are many remedies recommended for checking its progress at sea, the most extensive experience has impressed the fullest conviction on my mind, that there is no certain prophylactic for preventing, or remedy for curing scurvy, except a combined diet of fresh animal and vegetable food.

The definition given by Vogel of hemeralopia, or night-blindness is, ‘visus noctu abolitus.’ chap. 6. gen. 244.

Of this genus I shall venture to distinguish two species; and trust, that the history of the disease will vindicate the propriety of the division.

Species I. Idiopathica.

Hemeralopia sine causâ manifestâ.

—— II. Symptomatica.

Hemeralopia scorbutica.

After Vogel’s very plain definition of the disease, which is the subject of this essay, it might be thought superfluous to notice the nosological differences, which have existed at all periods respecting its proper generic name; were it not necessary to be aware that the generic titles of nyctalopia and caligo tenebrarum have been also assigned to it by different writers who have described it.

Hemeralopia, or night-blindness, has been noticed by Paulus Ægineta, Ætius, Galen and other commentators on Hippocrates, by Bontius’s translator, in Sir Gilbert Blane’s Treatise on the Diseases of Seamen, by Mr. Forbes* and other Sur-

* Observations on Tropical Nyctalopia, by Mr. J. Forbes, Surgeon, Royal Navy, Edinburgh Medical and Surgical Journal, No. 28. Page 417. & seq.

geons of the Royal Navy, under the nosological title of nyctalopia, while others, with Dr. Cullen, have termed it dysopia tenebrarum.

Hippocrates (if his text is correct) and others have confined the term nyctalopia to that disease in which the patient is blind by day and can see clearly by night.

Waving the discussion of the propriety of the adoption I have made, if we view the word hemeralopia as derived from *ημέρα*, *dies*, and *οπω*, *video*, to see by day, and nyctalopia from *νυξ*, *nox*, and *οπω*, *video*, to see by night, which I believe to be the common opinion; the propriety of Vogel's choice is at once evident; but it may be objected to the correctness of this derivation, that the "al" in both words denotes *α* (alpha privativa) in which case the sense of the above translations would be wholly reversed.

Hippocrates's definition of nyctalopia, denotes the very opposite of night-blindness; Οἱ δὲ τῆς νυκτὸς ὄρωντες *, οἷς δὴ νυκτάλωπας καλέομεν; Quos

* Οἱ δὲ τῆς νυκτὸς ὄρωντες] Nyctalopes dicuntur præcipuo significato, qui nocturna cœcitudine laborant, & noctu nihil cernunt, sole occiduo obscurius, ut scribunt Paulus & Ætius. Galenus quoque, in obscurarum vocum explicatione, idem testatur apud Hippocratem intelligi, his verbis, νυκτάλωπες οἱ τῆς νυκτὸς ἄλαοι. Quibusdam etiam dicuntur νυκτάλωπες, qui noctu quidem melius

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cernunt,

nyctalopas nuncupamus, qui noctu cernunt. Lib. ii. sectio ii. The note on this passage of Hippocrates, adduces various authorities for believing that those only are properly termed “nyctalopes,” who are affected with night-blindness, and in books the 4th and 6th, section 7th, the word *νυκταλωπες*, is every where rendered into Latin, by “nocturnæ cæcitudines,” or those who are blind by night. Fæsius’ edition.

Celsus describes night-blindness under the head of “De imbecillitate oculorum.—Præter hæc, imbecillitas oculorum est, ex quâ, quidam interdiu satis, noctu nihil cernunt,” lib. vi. cap. vi. This description is clearly applicable to night-blindness.

Linnæus defines nyctalopia to be, “Oculi visus nocturnus,” the sight possessed by night, class xi. ordo vii. 307. and Vogel, “Visus noctu saltem contingens,” the sight only possessed by night, class vi. 243. Agreeably to the definitions of these nosologists, the name nyctalopia cannot

cernunt, interdiu verò deterius, et si luna luceat, nihil cernunt: quod tamen rarum est, ut testatur Ætius, illud vero frequens & maxime usitatum, &c. p. 110. Fæsius’ edition of Hippocrates, Franc. 1621.

Τοῖσι δὲ νυκταλωπες] Hic *νυκταλωπες* vitii et affectionis oculorum nomen est, qua noctu nihil cernunt, nocturnam cæcitudinem dicunt, cum præcipuo significato *νυκταλωπες* dicantur eo affectu et nocturnâ cæcitudine laborantes. Note in lib. vi. sect. vii. p. 1195. From these notes it appears that the commentators have assumed it as a fact, that Hippocrates has, in these passages of his works, intended to treat of night, instead of day, blindness.

be applied to the disease of night-blindness with the slightest propriety or attention to correctness.

Sauvages, Sagar, and Cullen, do not notice any diseases under the generic titles of hemeralopia and nyctalopia. This omission is singular, as hemeralopia has sometimes terminated in total blindness, and is consequently of undoubted importance. Nyctalopia I have never met with, and I believe it to be a disease of very rare occurrence indeed.

The *Dysopia Tenebrarum* of Dr. Cullen, “*in quâ non nisi in obscurâ luce objecta videntur*,” in which objects are only visible in an obscure light, is a species of dysopia, whose definition will not justify its application to the disease of blindness by night. Cullen’s *Nosology*.

The *dysopia tenebrarum* of Dr. Cullen is synonymous to the *amblyopia crepuscularis* of Sauvages, and differs from the *amblyopia* of Linnæus and Vogel. *Amblyopia crepuscularis*, perhaps, properly signifies dullness or dimness of sight by twilight. Some French authors have termed night-blindness, *Gutta serena nocturna*. Dupont.

Vogel is the only nosologist, whose work I possess, that has inserted *Hemeralopia* among his genera, and it should be understood that this disease is the same as has been described by so many authors and medical men under the generic names of

nyctalopia and dysopia tenebrarum ; and without pretending to decide upon, much less to reconcile the differences of so many venerable authorities, I beg to observe, that I have adopted Vogel's term because his definition very accurately describes the character of the disease, and because I approve of his choice.

The abolition of eyesight by night has occurred in all ages, and is a common disease of seamen in the East and West Indies, Mediterranean, and in all hot and tropical countries and latitudes, and affects more or less the natives likewise of those regions of the globe : it also occurs frequently among soldiers in the East and West Indies ; but I have been informed, that it is by no means so prevalent with them, as with sailors. It is not an uncommon complaint of the Lascars, employed in the East India Company's ships, trading between India and Europe, during their voyages. It has very rarely indeed affected the officers of His Majesty's, or of the East India Company's ships. Celsus has remarked, that women and virgins, whose menstrual returns are regular, are exempt from this disease, "*quod in foeminam bene respondentibus menstruis non cadit.*" Lib. vi. cap. vi.* and it may be observed, that the inhabitants of cold latitudes are less subject to hemeralopia in their own

* Hippocrates makes the same observation on nyctalopia : *At neque mulieres neque virgines, quibus menses apparent, hoc morbo tentantur.* Lib. ii. sect. ii.

climate than the natives of tropical countries are in theirs; but more so when they visit the tropics.

The distinguishing symptoms of hemeralopia are a partial or total deprivation of the sight from the time of the setting of the sun to its rise on the following morning, while the sight is distinctly preserved in the day-time.

The disease always affects both eyes at the same time.

In general the nocturnal blindness is at first partial, the patient is enabled to see objects a short time after sunset, and perhaps will be able to see a little by clear moonlight. At this period of the complaint he is capable of seeing distinctly by bright candle-light. The nocturnal sight, however, becomes daily more impaired and imperfect, and after a few days the patient is unable to discriminate the largest objects after sunset or by moonlight; he gropes his way like a blind man, stumbles against any person or thing placed in his footsteps, and finally after a longer lapse of time, he cannot perceive any object distinctly, by the brightest candle-light.

If the patient is permitted to remain in this state of disease, the sight will become weak by day-light, the rays of the sun will be too powerful to be endured, whether they are direct or reflected;

lippitude is sometimes induced; myopism or shortness of sight succeeds, and in progress of time, vision becomes so impaired and imperfect, that apprehensions of a total loss of sight are entertained; and this dreadful consequence has been known to ensue, where the complaint has been wholly neglected, or left to nature, or where ineffectual remedies have been employed. Bontius, p. 73.

It has been remarked by some, that the patients are capable of seeing distinctly, at all periods of the complaint, with the aid of a strong artificial light; but, in *bad* cases of hemeralopia, in my practice, the patients positively denied the existence of the sense of distinct sight, by very clear candlelight.

If the progress of the disease be not interrupted, or if the attempts to shorten its duration have been unsuccessful, or a spontaneous cure is trusted to, it will continue from a short period to six or twelve months, or even longer, until it terminates in total blindness: “et sponte evadunt, partim quidem quadragesimo die, partim verò septimo mense, quibusdam etiam toto anno perseverat.” Hippocrates, lib. ii. sect. ii. Its more general period of duration is from two weeks to three or six months, when spontaneously cured; but it can always be cut short, or promptly cured by proper remedies. In the West Indies, Mr. Forbes says, its duration

varied from one night to nine months; its general period of continuance being from one to three months. Its disappearance was followed by epiphora in two cases. *Edinburgh Journal*, for October 1811, page 417 & *seq.* Mr. Forbes, however, “never attempted the cure, or saw it scientifically treated.”

It could not be perceived, that any particular constitutions or ages, or eyes of any particular description, form or colour, were peculiarly subject to hemeralopia, for it attacked, indiscriminately, people with eyes of every species of form and colour, and men of various temperaments, constitutions and ages: hence it is inferred, that idiosyncrasy had no effect in inducing it. Mr. Forbes observes, “that the four cases he met with agreed in one local peculiarity, viz. in having an iris of a very light colour; either a light grey or a light blue;” but further experience would have convinced him, that this peculiarity is by no means uniform or general; for the iris of six of the twelve cases which are hereafter mentioned, was neither of a light blue nor of a light grey, but was dark. If Hippocrates, by *nyctalopia*, really meant night-blindness, as his commentators have assumed, it appears, that his observations led him to conclude that black eyes were most subject to it. “*Atque in totum niger ut plurimum oculus erat.*” *Lib. vii. sectio vii.* There does not appear, then, any good reason for concluding, that a particular colour of

the iris bestows a peculiar susceptibility to be affected with night-blindness; as little reason is there for believing, that the size and form of the eye confers a peculiar susceptibility*.

In general, the constitutional health does not suffer in idiopathic cases, except that the patient sometimes becomes irritable and apprehensive. The appearance of the eyes does not always indicate a state of disease, nor is it often perceptibly altered from its appearance in health, unless the disease, from long duration, be advanced to the worst stage I have described. In this case the pupil is often contracted, and the eyes and actions of the patient evince marks of painful irritation, if the eyes are exposed to a vivid light, or if he looks upwards; but if they meet the direct rays of the sun, which in the tropics are always powerful, or a strong glaring reflection of them, pain and temporary blindness are induced, from which the patient recovers, by closing his eyelids, for a time, to exclude the rays of light, and by retiring to the shade. The pupil of the eye is considerably dilated, both by day and night, in the proportion of about one case in twelve, and at night the pupil is often dilated and does not perform its expansions and contractions, when exposed to the moon, or artificial light. The cases attended with dilated pupil were

* *Magnos verò, potius quam parvos oculos habebant. Hippocrates, lib. vi. sect. vii.*

generally those of long duration, and a more numerous proportion of such cases would undoubtedly have occurred, had the disease been suffered to protract its progress to a long period, and had not its course been interrupted by the prompt employment of successful remedies.

Europeans, who have been once affected with hemeralopia, in tropical climates, are particularly liable to a recurrence of this disease, as long as they remain in them. Mr. Forbes's paper states this to be the case, in the West Indies, and many sustained repeated attacks in the East Indies and China seas. Persons subject to hemeralopia, are also occasionally affected with dimness of sight, for some minutes, or short periods of some nights; and to momentary night-blindness, without its becoming a permanent disease.

The remote causes of idiopathic hemeralopia are not well ascertained, and it is difficult to comprehend the mode of operation of those which have been suggested; thus Bontius, (page 72, 73.) imputes it to "eating hot rice," in which idea the popular opinion in the East Indies agrees with him; and this author informs us, that the Dutch sailors in their East India settlements "are prohibited from partaking of that general article of diet, under a certain penalty." Sleeping with the face exposed to the brilliancy of day-light, the vivid reflection of the sun's rays from the

sandy shores of hot countries, and bright moonlight have been enumerated as causes. Dr. Pye thinks the disorder an intermittent one, and attempts to reconcile the differences that have existed in the descriptions and remarks on nyctalopia and hemeralopia, by supposing them to be the same disease, occurring at different periods, (Medical Observations and Enquiries). Hemeralopia is certainly a periodical disease, inasmuch as it returns every day after sunset, but there is no feature in its history or character, that has induced me to be of opinion, that its period of return is influenced by the same causes as intermittent fever.

I shall venture to conjecture, that too much light suddenly transmitted to the retina, or for a long period acting on it, may afterwards render it unsusceptible of being stimulated to action, by the weaker or smaller quantities of light transmitted to it by night; and hence, the proximate cause may consist in a state of insensibility of the retina to the stimulus of small quantities of light; or the retina may be in some degree paralytic or indisposed to action, from having been previously too strongly stimulated. The explanation here offered, is not free from obvious objections, although it is a certain fact, that the disease prevails most in those regions, where the sun is most powerful, and the light most vivid; that it affects Europeans not accustomed to the bright sunshine of the tro-

pics, more frequently than the natives ; that the disposition to relapses is never removed, until the European returns to his native climate, and is released from the influence and operation of the remote cause ; and that it is cured by stimuli applied directly to the eye, or to the integuments and parts in its vicinity.

Scorbutic hemeralopia is induced by the same remote causes, as scurvy in general,—hemeralopia should therefore be assigned to this species, when the subject of it has for a long period subsisted on a salted diet at sea, and with still more certainty and accuracy, if any other scorbutic symptom be present, such as spongy gums, ecchymoses, saline smell of the secretions, ulcers with liver like fungus, and an endless variety of scorbutic affections.

Experiments and observations have proved, that the blood, and all its secretions undergo considerable and important changes during the existence of scurvy ; and it would appear, that the humours of the eye suffer some changes in common with many, or all of the fluids and secretions of the body, the effect of which change may be to render them less transparent ; and an opacity of the humours of the eye in any degree thus induced, would be ill adapted to the transmission of weak streams or pencils of light. At all events, one fact strongly supports the idea of a morbid change of the humours of the eye ; for it is certain, that hemeralopia

has existed in numerous instances with other scorbutic affections, and as the scurvy has been progressively cured by a proper diet, and the healthy secretions re-established, the nocturnal sight has been gradually restored. Yet, this effect is by no means universal; and no cause, that carries conviction with it, can be assigned, why the eyes of one scorbutic patient should be afflicted with this malady, and so many escape, whose scorbutic diathesis is stronger, and whose symptoms are perhaps more severe, unless it is referrible to idiosyncrasy of constitution.

A deficiency in the transparency of the humours of the eye, induced by morbid secretion, might be considered a competent proximate cause of scorbutic hemeralopia, yet it is not possible to obtain positive proofs of such a circumstance existing in ordinary cases, as the humours cannot be obtained for examination and subjected to experiment.

Ætius, among other causes, attributes this disease, to a turbid or opake state of the humours or coats of the eye. “*Accedit autem hoc vitium, propter aliquam capitis imbecillitatem, maximeque visui spiritus crassitudinem, et reliquorum oculi humorum ac tunicarum.*”—Ætius, caput de Hemeralopia.

Of more than one hundred cases of idiopathic,

and two hundred of symptomatic hemeralopia, that have occurred in my practice, in different parts of the globe, (but chiefly in the East Indies) all have perfectly recovered, and hence it is inferred, that under proper treatment the prognosis may be always favourable, and the patient may be at once assured of the restoration of his sight.

The method of treatment, which I have adopted, is exceedingly simple, and certainly originated in reflecting and reasoning on the probable causes of the complaint already briefly stated.

A succession of blisters to the temples, of the size of a crown, or a half-crown piece, applied tolerably close to the external canthus of the eye, has succeeded in every case of idiopathic hemeralopia which I have seen. Under their application, the retina appeared to regain its irritability and sensibility to impressions from light, in the same gradual manner as it was deprived of it.

The first application of blisters commonly enables the patient to see dimly by candle-light, or perceive objects without the power of discriminating what they are: in some slight cases that admitted of easy cure, the first application has succeeded perfectly. The second application of blisters commonly enables the patient to see by candle-light distinctly, perhaps by bright moonlight, and even

half an hour after sunset, or the sight is restored for short periods during the night, and is again abolished: the second application very often effects a perfect recovery. The third, fourth or fifth applications, in succession, generally produce a complete recovery, where the first or second have failed; but some few rare instances of very obstinate hemeralopia have required even ten successive blisters to each temple; or, instead of using them in succession, a perpetual vesicatory has been formed on each temple, and maintained, until a cure has been accomplished, an event which has generally followed in a fortnight.

This simple remedy has never failed in my practice, even in cases of long duration; nor have I often found any auxiliary local one necessary. In some cases, however, shades have been directed to be worn before the eyes, both during the treatment, and some time after the cure, with a view of shielding them from the painful irritation, occasioned by exposure to the solar rays or vivid lights. Patients, too, have been often recommended to bathe their eyes with cold water two or three times a day.

I have known electricity employed as a topical stimulus to the eye, with success, on board the hospital ship at Prince of Wales's Island, and in the practice of others in India, but no occasion offered for its use with me.

A spontaneous cure has sometimes succeeded to the eruption of boils on the face or head, and to the formation of abscesses of the face, head or ears. “*Hos juvant quidam supervenientes abscessus, et ad infernas partes tendentes.*” Hippocrates, liber ii. sect. ii. The boils and abscesses in the vicinity of the eyes may be supposed to have acted in a manner similar to the vesicatories.

Although the local remedies may be in general confided in, to ensure a successful issue, yet it is sometimes necessary to pay attention to the constitution at large; for, on investigation, it will be sometimes discovered, that the patient is affected with increased secretion of bile, or temporary indigestion; the former indicated by a yellow state of the tongue and skin, headach and pain about the præcordia, and the latter by a white tongue, loss of appetite, pain and flatulence of the stomach; in either case, cathartics should be employed, such as neutral salts and calomel, and repeated, until the symptoms are removed. Indeed, a cathartic has been frequently prescribed on the first day, when no constitutional symptoms have been present.

If the symptomatic hemeralopia is attended with any of the ordinary symptoms of scurvy or scorbutic affections, it should be inferred, that a scorbutic diathesis occasions it, and hence it is the most rational and prudent practice to defer (or suspend if they have been previously used) the ap-

plication of the blisters, until the scorbutic disposition is corrected, by proper diet and medicines; not only, because well founded apprehensions ought to be entertained, of a scorbutic ulcer forming on the blistered parts, but, because (as has been already stated) the nocturnal sight is often gradually restored, as the cure of scurvy progressively advances.

Should the scorbutic hemeralopia not yield to the usual treatment of scurvy, it must be classed with the idiopathic disease, after the scorbutic symptoms have receded, and recourse must be had to blisters, and the same mode of treatment, as has been already recommended for its cure.

In the scorbutic hemeralopia, no absolute necessity exists for delaying the application of blisters beyond the period that a proper diet is obtained, when vesicatories can be safely applied, without an apprehension of inducing a scorbutic ulcer.

During the existence of scorbutic hemeralopia, when at sea, the exhibition of lemon and lime-juice, and the other remedies adapted to the general cure of scurvy, should be adopted, although a cure may not be accomplished or expected, until a diet of fresh animal and vegetable food is procured.

I have estimated, that about one-third of the

cases of scorbutic hemeralopia resists the efficacy of the antiscorbutic regimen and remedies, and consequently require to be treated ultimately, as idiopathic cases.

In the scorbutic cases of hemeralopia, after a diet of fresh animal and vegetable food has been instituted and persevered in for a short time, and the scorbutic diathesis is corrected, if a lax state of the bowels is not induced by the change of diet, as is usually the case, I have frequently directed cathartics, with a view of exciting the absorbents to convey away, and change the humours of the eye with celerity, that a healthy secretion may be re-established.

I have never administered cathartics in either species of hemeralopia, without, at the same time, employing vesicatories, except in very few instances in early practice, and these did not offer any satisfactory evidence of a successful result from their exhibition; yet, in several cases, the blisters and a cathartic have so promptly brought about a recovery, that I have been induced to ascribe much of the benefit obtained to their use.

From the long and tolerated duration of many of those cases originally induced by scurvy, arising from the necessity of deferring the use of the most effectual remedy, their cure has been sometimes proportionally protracted, but has, nevertheless,

been always accomplished, by perseverance in the repetition of blisters.

It should be observed, that hemeralopia is sometimes, nay, often cured by the spontaneous efforts of nature, when no remedy has been adopted, or any practical attempt at recovery made, as in Mr. Forbes's practice above quoted. This spontaneous cure is sometimes effected suddenly, but more commonly in a gradual manner: but, as the duration of all cases left to nature, is unlimited and uncertain; as their mode of termination is doubtful; as loss of sight sometimes ensues; as it is impossible to establish a diagnosis, by which, the cases that admit of a spontaneous cure, can be distinguished from those that will not; and as no injury can be induced by the remedies recommended for their cure, I think the practice should be adopted in all cases, in preference to leaving the disease to the spontaneous efforts of nature.

From the cure being often spontaneous, some fanciful and whimsical remedies experimentally employed at the period of recovery, have occasionally obtained the credit of success, and are recommended with all the sanction of venerable authority, when the cure has been really effected by a healthy process of nature. I never noticed any evident and uniform good effect, from any remedy, except *time*, until the use of the blisters was adopted; and when their efficacy was ascertained,

the disease was never left to nature, or useless experiment.

In the case of John Whitlow, marine, of near twelve months' duration, which occurred soon after my arrival in India, and which particularly excited my interest, and engaged my attention, three months elapsed in trusting the process of cure to nature; and six months were employed in trying the effects of collyria, sternutatories, masticatories, purgatives, emetics, bark and tonics, calomel, so as to induce ptyalism, and other remedies recommended, but no benefit resulted. He was at last cured by blisters, twelve times repeated, and was the first subjected to the treatment. The *disposition* to a recurrence of disease in this case was so strong, during the five years he remained in the East Indies, that it was not completely removed till three months after the patient's arrival in England. When it did recur, its cure was effected with comparative facility, by the prompt re-application of the blisters, and never after required so many repetitions of blisters as at first. Shortly after the fortunate result was obtained in Whitlow's case, one of three months', and another of five months' duration were effectually cured by the same remedy, in a much shorter time.

The frequent recurrence of this disease during the patient's continuance in a tropical or hot climate, naturally suggests the propriety of recom-

mending those subject to it to return to their native climate, which generally has the effect of completely removing the disposition to relapse.

Notwithstanding the efficacy of the treatment I have recommended, was so well known by the seamen of his Majesty's ship *Belliqueux*, that they often applied for blisters, as a matter of course, without consulting me; and other surgeons in India, at my suggestion, adopted it with equal success; yet, as it possibly may not always succeed, I shall notice some remedies that are recommended by authors, and leave the reader to estimate their comparative value.

The liver of different animals has been selected as the sovereign remedy in this disease; and professional men have availed themselves of its use, in every variety of form and modification that ingenuity could well have devised. Thus, Celsus has directed the eyes to be anointed with the blood of the liver of animals, but gives a particular preference to that of the he-goat:—The same liver ought to be eaten.—“*Sed sic laborantes inungi oportet sanguine jecinoris (maxime hircini, sin minus caprini) ubi id assum coquitur, excepto: atque edi quoque ipsum jecur debet.*” *Lib. vi. Caput vi.*

In the Mediterranean and Italy, fumigations of bullocks', goats' and sheep's livers, boiled, fried or

roasted, have been conveyed to the eyes by proper apparatus; their livers have been prescribed for diet; cataplasms, formed of slices of that viscus, have been applied over the eyelids at night, and the eyes have been anointed with the oil or fat obtained from it. The same practice has obtained in the West Indies.

A strong testimony in favour of fumigations of bullock's liver, is given by Monsieur Dupont, in a "Mémoire sur la goutte sereine nocturne epidémique ou nyctalopie," wherein he states, that two hundred and fifty soldiers were easily cured of it in the following manner:—In a new glazed earthen pot, boil half a pound of bullock's liver, in four pints of water, until it is cooked enough for eating: when the steam arising from it is sufficiently cool, place the head close to the pot, surround it with a covering, and retain it there, with the eyes open, to receive the steam, until it no longer arises. One application in this manner is said to effect a permanent cure.

Bontius bestows his testimony in favour of a fish's liver: he, indeed, recommends "sternutatories, masticatories, purging and bleeding: but the *grand specific* in this disorder, and a medicine of which I have often experienced the virtues, is the liver of the fish *Lamia*, eaten crude with salt. The Dutch name of this fish is 'Een Haye,' and when exposed to the sun, there distils from it an

oiliness, named in the same language ‘Traen,’ which anointed upon the eye is an immediate remedy. The livers of other fish are injurious.”—(Translation of Bontius by a Physician, pages 72, 73.)

The fish here described, which in the Malayan language is called “Lamia,” and in the Dutch “Een Haye,” is the shark, the liver of which is to be eaten crude; and the oil which possesses such “immediate” virtues of restoration of sight, is the train-oil from the shark*. Bontius was often successful, but acknowledges he also was not, even with the *specific*. The root of wild valerian is recommended in a note by the translator.

In the West Indies, citric acid has been injected between the eyelids; and sailors have expected great advantages from washing their eyes with human urine†! “One man washed his eyes with his own urine, and the blindness did not recur on the night following this first lavation, nor afterwards.”—Mr. Forbes on Tropical Nyctalopia, already quoted.

* The liver of the large white shark yields about one gallon of oil.—GOLDSMITH.

† Sailors are credulous and superstitious enough to attribute extraordinary effects to human urine: thus, I have known a boatswain of a man of war persuade sailors, affected with syphilis and gonorrhœa, to take copious potations of their own urine, until the stomach and general health have been much deranged by the practice.

Celsus enumerates other remedies besides the unguent of the blood of the he-goat's liver: "Licet etiam tamen iisdem medicamentis non inutiliter uti, quæ vel cicatrices vel asperitudinem extenuant. Quidam, contrito semine portulacæ, mel adiiciunt, eatenus, ne id ex specillo distillet, eoque inungunt. Exercitationibus, balneo, frictionibus, gargarizationibus, iisdem, his quoque utendum." Lib. vi. cap. vi. de Imbecillitate Oculorum.

Is the train-oil of the shark, that proves so "immediate a remedy," the application alluded to by Mr. Jackson in his account of Morocco? Or is it, the unguent of liver-blood, or of honey and powdered purslain seed, mentioned by Celsus, that "cures the disease by one application?" Mr. Jackson's Account of Morocco, 2d edition.

I must candidly confess, that my credulity is staggered, and my scepticism excited, when I read of "specifics and immediate cures" of night-blindness, by one application of any remedy. If Bon-tius found, that "eating the crude liver of the shark was a specific," or that "anointing the patient's eyes with its train-oil was an immediate remedy," whence arose the necessity of employing "sternutatories, masticatories, purging, and bleeding?" If one application of the patient's own urine is effectual, or if the preparations of the blood and livers of animals is an adequate remedy, it is difficult to see why collyria, unguents,

exercise, frictions, and gargles, are to be enumerated as useful auxiliaries, as Celsus has done.

I am rather disposed to believe, that those remedies have been employed at the period that nature has performed a spontaneous cure; yet it is impossible thus to dispose of the testimony of Monsieur Dupont adduced in favour of fumigations of bullock's liver, for the effect was produced in too many instances, although it is worthy of remark, that he does not state how soon the recovery took place, after the fumigation was used. I never derived the beneficial advantages from the use of the liver of animals, which I was induced to expect, from the authoritative and venerable recommendations, with which they have been invested.

It may be permitted me to observe, that in the treatment of all diseases, whose nature is understood, or in which the practice is uniformly adequate to the cure, the happy result is generally procured by a few simple remedies, while those diseases, that have resisted the tests of experiment, or have baffled the suggestions of ingenious reasoning and theory, have been assailed at different periods, by remedies of various qualities, opposite nature, and doubtful effects, as has been the case with night-blindness; but when the successful remedy is at length discovered, it generally proves uniform and certain in its effects, simple in its nature and operation, and safe and easy in its appli-

cation : hence, when numerous remedies are recommended for any particular disease, the mind vacillates, and is perplexed in its choice of remedies, and we become persuaded, that it has never been treated with uniform success. Such is the case with epilepsy, tetanus, &c.

Of twelve cases of hemeralopia, selected for observation at one period of the year 1808, as they casually stood on the list, it was noted, that seven had grey eyes, one dark grey, one black, three hazle, and one hazle-brown; their hair shewed different shades and colour, from the light and carrotty hair of Bonnel Stewart, and Alexander Mitchell, to the black hair of Bartholomew Germaine, an Italian. Their ages varied from twenty to thirty-eight. In eleven cases, the iris contracted and expanded regularly in the day-time, as in health; in one, the pupil was much dilated. The tunica conjunctiva was clear, and the lucid cornea was brilliant in all. Blindness was induced in all, shortly after sunset, and the sight restored after broad day-light. Eleven could see tolerably, and one could see distinctly and clearly, by strong candle-light. Nine were affected with scorbutic symptoms, and two afterwards became affected with scurvy. Bonnel Stewart, marine, observed, that on bright sun-shiny days, blindness was sooner induced in the evening. Robert Kerr recovered his sight one night, but lost it the next. Alexander Mitchell could see a little for a few nights, but

total nocturnal blindness recurred. It may be here remarked, that some patients, about the period of recovery, alternately lost and recovered their sight by night, or during different periods of the same night. Nine of the twelve recovered their sight perfectly, as soon as the scorbutic symptoms yielded ; the other three were cured by blisters to the temples.

Since my arrival in England from India, in August, 1811, the observations of Professor Scarpa on the Diseases of the Eyes, translated by Mr. James Briggs, have been perused by me. Professor Scarpa succeeded in curing four cases of hemeralopia, as it appears in Europe.

“ The first was the case of a boy, 14 years of age, who, for several weeks, had used fumigations of boiled sheep’s liver, without advantage. The second was that of a waterman, and the third of a husbandman of our neighbouring rice fields. These last were between 30 and 40 years old, each meagre, with a yellowish tumid countenance. The boy, after having vomited copiously by means of a grain and an half of tartarized antimony, dissolved in four ounces of water, and taken in small quantities, in the space of two hours, made use of the opening powders * during the following days ;

* The opening powders “ are composed of one ounce of the crystals of tartar (*potassæ supertartras*) and one grain of the tartarized antimony, divided into six equal parts, of which the

which occasioned some nausea, and two, or sometimes three, copious motions every day. On the 5th day, at night, he began to distinguish surrounding objects, by the very weak light of a lantern. The vapour of the caustic volatile alkali was used constantly from the first day after the emetic; and on the 16th day he was perfectly cured. The waterman was treated on the same plan, and vomited a large quantity of yellowish viscid matter. The vapour was applied every four hours, but he did not begin to see and distinguish objects at night by the weak light of a candle until the 11th day.” “The husbandman only vomited once in large quantity, but was afterwards greatly nauseated by the opening powders for nine successive days, and had every day a copious evacuation from the bowels of greenish matter; he used also the vapour of caustic volatile alkali, as a local application, and on the 14th day, at night, began to see by the light of a candle, and continued to acquire a greater power of seeing objects at night, until he was perfectly well. Towards the end of the treatment, I ordered this patient to take the cinchona with valerian root.”

“But the most speedy recovery that I have known, was in the spring of the present year, in the case of Mauro Bonini, of Donelasco, of 22

patient should take one in the morning, another four hours afterwards, and the third in the evening, during eight or ten successive days.”

years of age. In the month of March he began to discover, that at sun-set he could only distinguish objects very imperfectly. This indisposition increased to such a degree, that in the beginning of May, he became, towards night, almost blind. On the 10th of May he came to this hospital. On examining him in the day-time, I found the pupil of both his eyes unusually dilated, and almost immoveable; and towards night I made the experiment, and satisfied myself that he was blind. The patient complained of a bitter taste, heaviness of the head, and his tongue was furred. On the 11th of May, I prescribed an emetic, which did not produce all the effect that I expected; on the following day, therefore, I gave him one more powerful, composed of ziss of ipecacuanha, and two grains of tartarized antimony. This caused him to vomit a large quantity of yellowish green matter; the patient immediately afterwards found his head relieved, and the bitter taste removed; the pupil of both eyes was a little contracted, and appeared to be in a slight degree sensible to the impression of a vivid light. He began to use the vapour of the caustic volatile alkali externally. On the evening of the same day, the patient's sight appeared to be improved. On the 13th, no remedy was employed, except the vapour. On the 14th, the patient complained again of a bitter taste, and his tongue appeared furred. I ordered him to take the opening powders every three hours, which produced nausea, and repeated evacuations from

the bowels. The use of the vapour was continued. Towards the evening, the patient distinguished very well all the objects which were presented to him. On the 16th, the symptoms of indigestion entirely disappeared, and the pupil of both eyes was contracted, as in a state of health. On the 17th, the patient left the hospital, perfectly cured.” Scarpa, on Hemeralopia, page 500 & *seq.*

I do not coincide in the opinion of Professor Scarpa, that nocturnal blindness is “most frequently sympathetic of disorder of the stomach,” page 499; although I admit, that there is reason for attributing three of his cases to a sympathy of this nature. Bonini’s “bitter taste, furred tongue, heaviness of the head, and vomiting of yellowish green matter” (in my opinion) clearly denoted an increased secretion of bile, and deranged functions of the stomach. The yellowish viscid matter vomited by the waterman, and his yellowish countenance, as well as the daily green stools of the husbandman, are clear evidences, though not unequivocal proofs of deranged biliary secretion, previous to the use of the tartrate of antimony. There is not however any symptom detailed in the boy’s case, indicative of disordered digestive organs.

I should have treated three of the cases, but more especially Bonini’s, with smart cathartics of neutral salts and calomel (instead of the mild opening powders), and vesicatories to the temples,

in a manner precisely similar to those cases, which I have stated to be accompanied with constitutional symptoms, characteristic of deranged biliary secretion and disordered digestion ; and I am disposed to think, that they would have been more speedily cured ; for it is probable that the vapour of caustic volatile alkali acts upon the same principle as vesicatories, but perhaps with less active powers, and experience has convinced me, that increased secretion of bile is treated more successfully by purgatives than emetics.

I should have been enabled, perhaps, to establish the similitude, if not identity of those cases, with three of Professor Scarpa's, in the treatment of which I have recommended attention to be paid to the constitutional symptoms, had I not, in my practice, always combined the use of the local with the constitutional remedies : but the invariable application of blisters in all those cases, where cathartics were exhibited to remove disorder of the digestive organs, prevented me from ascertaining it with proper accuracy.

Professor Scarpa's cases (those noticed by him at page 513), and several that occurred in my own practice, render it probable, that there is a variety of symptomatic hemeralopia, depending on derangement of the liver and digestive organs. I do not perceive, that European varies from tropical hemeralopia, in its symptoms or history ; and as

far as one case justifies the inference, I think it may be treated very successfully in the same manner.

Charles Frederick, seaman of his Majesty's ship *Warrior*, in the Flushing fleet, applied to me on the 11th of September, 1812, on account of nocturnal blindness. For some nights, he had become blind after sun-set, but the sight was restored after sun-rise in the morning. He had not any other complaint, but is of a full habit. He was ordered a saline purgative draught, with three grains of calomel, and a blister was applied to each temple. On the 14th, the blisters had healed, and the patient could distinguish objects distinctly at intervals during the night, and indistinctly at other periods. The blisters were repeated. On the 15th, the patient could distinguish objects at all periods of the night, when he awoke, and made the experiment. On the 18th, the blisters had healed, he continued well, and was desired to keep his night watch as usual. On February 8th, 1813, the nocturnal sight continued perfect, but since his cure, he has observed, that on two or three nights, the sight was dim for a short period, as if a veil or cloud was before the eyes. Frederick was subject to hemeralopia, in India, but of three hundred of my old shipmates now in the *Warrior*, this is the only instance of its recurrence in Europe, although many of them had repeated attacks of it, in the East.

Might not vesicatories, applied to the temples, be of more utility in the imperfect amaurosis, than “blisters to the neck,” or even “the vapour of caustic volatile alkali?”

Although Professor Scarpa quotes the passage in Monsieur Dupont's *Mémoire*, on the success of fumigations of bullock's liver, yet as it failed in the boy's case, he speaks of it with doubt. “If, however,” says he, “the efficacy of this remedy is a matter of fact, we may boast of another means of curing the nocturnal blindness.” Page 503.

